WE CLAIM:

1.   A method for increasing the accuracy of the positioning of a first object relative to a second object by utilizing a recognition of structures on the second object that have a minimum structure width, the method comprising the steps of:

(1) acquiring images of an observation region that encompasses at least the first object and a desired position on the second object;

(2) at a first instant T_o, by means of a first recognition method having a resolution accuracy that is higher or better than the minimum structure width, determining the position of the first object relative to a second object; and

(3) repositioning the first object relative the second object to the desired position at a second instant,

wherein at least one of the first and the second objects are movable using a positioning device, wherein before about the second instant, by means of a second recognition method, a relative displacement of the first object with respect to the second object is determined with respect to their positions at the first instant, and wherein step (3) further comprises correcting for the relative displacement of the first object with respect to the second object.

2.   The method of claim 1 wherein a pattern recognition method is used as the second recognition method.

3.   The method of claim 2 wherein the resolution accuracy of the pattern recognition method is lower or poorer than about the minimum structure width.

4.   The method of claim 2, further comprising:

bringing the positioning device to a basic position x_o, y_o, φ_o at about the first instant T_o, and further in temporal proximity to the first instant T_o using the pattern recognition method to acquire a first image pattern from the observation region that encompasses at least a portion of the second object and a second image pattern from the observation region that encompasses at least a portion of the first object;

bringing the positioning device to a basic position x_o, y_o, φ_o before about the second instant, and further using the pattern recognition method to acquire a third image pattern from the observation region that encompasses at least a portion of the second object, and a fourth image pattern from the observation region that encompasses at least a portion of the first object;

by means of the pattern recognition method, determining a first pattern displacement from the first and third image patterns and a second pattern displacement from the second and fourth image patterns and further determining the relative displacement from the first and second pattern displacements; and

using the relative displacement to correct the position x_o, y_o, φ_o of the positioning device to a desired position at the second instant.

5.   The method of claim 4 wherein at least one of the first image pattern and the third image pattern is respectively identical the second image pattern and the fourth image pattern.

6. The method of claim 1 further comprising, after the second object is processed, determining the relative displacements of the first object and further objects that have minimum structure widths using steps that are identical to steps (1)-(3) to correct the relative positions of the further objects and the first object.

7. The method of claim 1 further comprising,

after the second instant, repeating in time the determination of the relative displacement of the first and second objects so as to maintain a desired position of the first object on the second object.